



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,328	04/10/2001	Earl C. Cox	AVI 1006-01US	8810

28327 7590 10/30/2003

THE LAW OFFICE OF JOHN A. GRIECCI  
703 PIER AVE., SUITE B #657  
HERMOSA BEACH, CA 90254

EXAMINER
----------

RAMPURIA, SHARAD K

ART UNIT	PAPER NUMBER
----------	--------------

2683

8

DATE MAILED: 10/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/832,328

Applicant(s)

COX, EARL C.

Examiner

Sharad K. Rampuria

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,7. 6) ☐ Other: \_\_\_\_.

Art Unit: 2683

### DETAILED ACTION

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lanzerotti et al., McKenna et al., Zicker, & Lai.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 6-7, 11-13, & 16-17 are rejected under 35 U.S.C. 102 (e) as being anticipated by Martin et al.

1) Regarding claim 1, Martin disclosed A communications system (abstract), comprising: a plurality of ground base stations (22; fig.1; col.3; 44-53) , each ground base station being connected to at least one end-user communications device (18,20; fig.1; col.3; 44-53); and

Art Unit: 2683

a suborbital platform (30; fig.1; col.3; 44-53) carrying a communications device (12; fig.1; col.3; 44-53), wherein the plurality of ground base stations and the communications device are configured to maintain a plurality of communications signals, each communication signal linking the communications device to at least one of the plurality of ground base stations. (col.4; 12-25)

6. Regarding claim 6, Martin disclosed A method of maintaining a communications link between a ground station and a suborbital platform, wherein the ground station communicates using an antenna that provides a communication signal of limited beamwidth (col.4; 34-48), comprising: positioning the suborbital platform and antenna such that the suborbital platform is within the beamwidth of the antenna's signal; (col.4; 34-48 & col.3; 44-53) maintaining the antenna in a generally fixed location; (22; fig.1; col.4; 49-60) and flying the suborbital platform in a pattern that maintains the suborbital platform within the beamwidth of the signal. (col.3; 53-67)

7. Regarding Claim 7, Martin disclosed The method of claim 6, wherein the airplane is substantially maintained within a station delimited by a 4000-foot diameter circle and a 100-foot altitude range. (col.5; 57-65 & col.3; 44-67)

11. Regarding claim 11, Martin disclosed A communications system (abstract) for communicating between a satellite and a ground station, comprising: a downward-pointing communications antenna on the satellite, the downward-pointing antenna having a limited signal beam-width; (col.4; 34-48 & 200; fig.5; col.9; 4-16)

Art Unit: 2683

an upward-pointing communications antenna on the ground station, the upward-pointing antenna having a limited signal beam-width, wherein the downward-pointing antenna and the upward-pointing antenna are aimed such that they delimit a region of airspace that is within both signal beam-widths; (col.4; 34-48 & 168; fig.5; col.9; 53-59, col.10; 45-55) and a suborbital platform configured to fly a pattern entirely within the delimited region of airspace. (col.3; 53-67)

12. Regarding Claim 12, Martin disclosed The communication system of claim 11, wherein the suborbital platform is substantially maintained within a station delimited by a 4000-foot diameter circle and a 100-foot altitude range. (col.5; 57-65 & col.3; 44-67).

13. Regarding claim 13, Martin disclosed A communication system (abstract) for providing communications between a ground station and a spacecraft in geosynchronous orbit, the ground station and the spacecraft having communications systems that are characterized by operating with given beamwidths (col.4; 34-48), comprising:  
a suborbital platform (30; fig.1) maintained at a non-equatorial latitude that prevents the ground station from being within the beamwidth of communication signals transmitted by the spacecraft toward the suborbital platform, and that prevents the spacecraft from being within the beamwidth of communication signals transmitted by the ground station toward the suborbital platform. (col.4; 34-48 & col.3; 44-67)

Art Unit: 2683

16. Regarding Claim 16, Martin disclosed The communication system of claim 13, wherein the suborbital platform is configured to maintain the airplane within a station delimited by a 4000-foot diameter circle and a 100-foot altitude range. (col.5; 57-65 & col.3; 44-67).

17. Regarding claim 17, Martin disclosed A communication apparatus for communicating data between a terrestrial gateway and a plurality of terrestrial terminals (abstract), comprising:

an airplane (12; fig.1); and

a network carried by the airplane, and having at least three downward-pointing communication devices (col.3; 54-67), each communication device defining a beamwidth for communication, the communication devices' beamwidths delimiting distinct terrestrial communication cells that include the terminals when the airplane is aloft in a predetermined station;

wherein the network is configured to maintain a communications signal carrying the data with the gateway; (col.4; 34-60) and

wherein the communications devices are configured to route the data carried by the communication signal between the network and the plurality of terminals. (col.4; 34-60 & col.3; 44-67)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. in view of Youssefzadeh et al.

2. Regarding claim 2, Martin disclosed all the particulars of the claim except the wireless local loop. However, Youssefzadeh teaches in an analogous art, that The communications system of claim 1, wherein at least one of the plurality of ground base stations includes a wireless local loop, the wireless local loop establishing communication between the at least one of the plurality of ground base stations and at least one subscriber remote station, the at least one of the plurality of ground base stations linking the wireless local loop communications with the communications signal between the at least one of the plurality of ground base stations and the communications device. (col.14; 36-61) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the wireless local loop in order to provide local communication through wireless cell technology.

Art Unit: 2683

3. Regarding claim 3, Martin disclosed all the particulars of the claim except cordless telephone being used by a subscriber not affiliated with the building housing the at least one of the plurality of ground base stations. However, Youssefzadeh teaches in an analogous art, that The communication system of claim 2, wherein the at least one subscriber remote station is two or more cordless telephones, each cordless telephone being used by a subscriber not affiliated with the building housing the at least one of the plurality of ground base stations. (col.8; 25-47) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include cordless telephone being used by a subscriber not affiliated with the building housing the at least one of the plurality of ground base stations in order to provide local communication through wireless cell technology between cells and the PSTN.

Claims 18, 23-25, are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. in view of Knoblach et al.

18. Regarding claim 18, Martin disclosed all the particulars of the claim except the network is configured to maintain additional communications signals carrying additional data with additional gateways. However, Knoblach teaches in an analogous art, that The communications system of claim 17, wherein:

the network is configured to maintain additional communications signals carrying additional data with additional gateways; (pg.9; 0063) and

the communications devices are further configured to route the data carried by the additional communication signals between the network and the plurality of terminals. (pg.9; 0063)



Art Unit: 2683

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the network is configured to maintain additional communications signals carrying additional data with additional gateways in order to provide additional frequencies if available.

23. Regarding claim 23, Martin disclosed A communication system for communicating data between one or more data sources and a plurality of terrestrial terminals, comprising: a plurality of networks, each airplane carrying a network, each network having at least three downward-pointing communication devices (col.3; 54-67), each communication device defining a beamwidth for communication, the communication devices' beamwidths delimiting distinct terrestrial communication cells that include the terminals when the airplane is aloft in a predetermined station; (col.4; 34-60) and one or more gateways in communication with the one or more data sources, wherein each network is configured to maintain one or more communications signals carrying the data with one or more gateways; (col.4; 34-60) wherein each communications device is configured to route data carried by its respective network's one or more communication signals between its respective network and one or more of the plurality of terminals. (col.4; 34-60 & col.6; 31-53)

Martin fails to disclosed a plurality of airplanes. However, Knoblach teaches in an analogous art, that a plurality of airplanes (12 a-g; fig. 1; pg.6; 0045; lines 1-8); Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a plurality of airplanes in order to provide ubiquitous line of sight for coverage of the geographical area.

Art Unit: 2683

24. Regarding claim 24, Martin disclosed all the particulars of the claim except a plurality of airplanes. However, Knoblach teaches in an analogous art, that The communications system of claim 23, wherein the plurality of airplanes include a first airplane and a second airplane, each airplane being located in a station outside of the beamwidths of the communication signals between the terminals and communication devices in other airplanes (12 a-g; fig.1; pg.6; 0045); Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a plurality of airplanes in order to provide ubiquitous line of sight for coverage of the geographical area.

25. Regarding claim 25, Martin disclosed all the particulars of the claim except a plurality of airplanes. However, Knoblach teaches in an analogous art, that The communications system of claim 24, wherein the first airplane and the second airplane each include communications devices that are configured to communicate with one or more of the same communication cells. (12 a-g; fig.1; pg.6; 0045); Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a plurality of airplanes in order to provide ubiquitous line of sight for coverage of the geographical area.

Art Unit: 2683

Claims 21-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. in view of Gross.

21. Regarding claim 21, Martin disclosed all the particulars of the claim except the airplane's entire station falls within the terminal antenna's beamwidth without any adjustment of the terminal antenna's aim. However, Gross teaches in an analogous art, that The communications system of claim 17, wherein each terminal has a terminal antenna configured for carrying the communication signal, the terminal antenna being configured such that the airplane's entire station falls within the terminal antenna's beamwidth without any adjustment of the terminal antenna's aim. (col.2; 50- col.3; 14) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the airplane's entire station falls within the terminal antenna's beamwidth without any adjustment of the terminal antenna's aim in order to provide a rapid means of directing a narrow beam antenna to the direction of the desired satellite.

22. Regarding claim 22, Martin disclosed all the particulars of the claim except the terminal antenna includes no active tracking mechanism. However, Gross teaches in an analogous art, that The communications system of claim 21, wherein the terminal antenna includes no active tracking mechanism. (col.2; 50- col.3; 14) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the terminal antenna includes no active tracking mechanism in order to provide a rapid means of directing a narrow beam antenna to the direction of the desired satellite.

Art Unit: 2683

Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. & Knoblach et al. further in view of Gross.

28. Regarding claim 28, The above combination disclosed all the particulars of the claim except the airplane's entire station falls within the terminal antenna's beamwidth without any adjustment of the terminal antenna's aim. However, Gross teaches in an analogous art, that The communications system of claim 23, wherein each terminal has a terminal antenna configured for carrying the communication signal, the terminal antenna being configured such that the airplane's entire station falls within the terminal antenna's beamwidth without any adjustment of the terminal antenna's aim. (col.2; 50- col.3; 14) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the airplane's entire station falls within the terminal antenna's beamwidth without any adjustment of the terminal antenna's aim in order to provide a rapid means of directing a narrow beam antenna to the direction of the desired satellite.

29. Regarding claim 29, The above combination disclosed all the particulars of the claim except the terminal antenna includes no active tracking mechanism. However, Gross teaches in an analogous art, that The communications system of claim 28, wherein the terminal antenna includes no active tracking mechanism. (col.2; 50- col.3; 14) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the terminal antenna includes no active tracking mechanism in order to provide a rapid means of directing a narrow beam antenna to the direction of the desired satellite.

Art Unit: 2683

Claims 4-5, 8-10, 14-15, 19-20, & 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. in view of Hibbs et al.

4. Regarding Claim 4, Martin disclosed all the particulars of the claim except the communications device is carried by an airplane configured to stay aloft without refueling for at least 200 hours. However, Hibbs teaches in an analogous art, that The communication system of claim 1, wherein the communications device is carried by an airplane configured to stay aloft without refueling for at least 200 hours. (col.7; 51-67) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the communications device is carried by an airplane configured to stay aloft without refueling for at least 200 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.

5. Regarding Claim 5, Martin disclosed all the particulars of the claim except the communications device is carried by an airplane configured to stay aloft without refueling for at least 3000 hours. However, Hibbs teaches in an analogous art, that The communication system of claim 1, wherein the communications device is carried by an airplane configured to stay aloft without refueling for at least 3000 hours. (col.6; 61-67) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the communications device is carried by an airplane configured to stay aloft without refueling for at least 3000 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.

Art Unit: 2683

8. Regarding Claim 8, Martin disclosed all the particulars of the claim except the step of flying is continued for at least 200 hours. However, Hibbs teaches in an analogous art, that The method of claim 6, wherein the step of flying is continued for at least 200 hours. (col.7; 51-67) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the step of flying is continued for at least 200 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.

9. Regarding Claim 9, Martin disclosed all the particulars of the claim except the communications device is carried by an airplane configured to stay aloft without refueling for at least 3000 hours. However, Hibbs teaches in an analogous art, that The method of claim 6, wherein the step of flying is continued for at least 3000 hours. (col.6; 61-67) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the communications device is carried by an airplane configured to stay aloft without refueling for at least 3000 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.

10. Regarding Claim 10, Martin disclosed The method of claim 6, wherein the suborbital platform is an airplane. (12; fig.1; col.3; 53-67)

14. Regarding Claim 14, Martin disclosed all the particulars of the claim except the suborbital platform is configured to operate for at least 200 hours. However, Hibbs teaches in an analogous art, that The communication system of claim 13, wherein the suborbital platform is configured to operate for at least 200 hours. (col.7; 51-67) Therefore, it would have been obvious to one of

Art Unit: 2683

ordinary skill in the art at the time of invention to include the suborbital platform is configured to operate for at least 200 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.

15. Regarding Claim 15, Martin disclosed all the particulars of the claim except the suborbital platform is configured to operate for at least 3000 hours. However, Hibbs teaches in an analogous art, that The communication system of claim 13, wherein the suborbital platform is configured to operate for at least 3000 hours. (col.7; 51-67) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the suborbital platform is configured to operate for at least 3000 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.

19. Regarding Claim 15, Martin disclosed all the particulars of the claim except the suborbital platform is configured to operate for at least 200 hours. However, Hibbs teaches in an analogous art, that The communications system of claim 17, wherein the communications device is carried by an airplane configured to stay aloft without refueling for at least 200 hours. (col.7; 51-67) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the suborbital platform is configured to operate for at least 200 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.

20. Regarding Claim 20, Martin disclosed all the particulars of the claim except the suborbital platform is configured to operate for at least 3000 hours. However, Hibbs teaches in an

Art Unit: 2683

analogous art, that The communications system of claim 17, wherein the communications device is carried by an airplane configured to stay aloft without refueling for at least 3000 hours. (col.7; 51-67) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the suborbital platform is configured to operate for at least 3000 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.

26. Regarding Claim 26, Martin disclosed all the particulars of the claim except the suborbital platform is configured to operate for at least 200 hours. However, Hibbs teaches in an analogous art, that The communications system of claim 23, wherein each airplane is configured to stay aloft without refueling for at least 200 hours. (col.7; 51-67) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the suborbital platform is configured to operate for at least 200 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.

27. Regarding Claim 27, Martin disclosed all the particulars of the claim except the suborbital platform is configured to operate for at least 3000 hours. However, Hibbs teaches in an analogous art, that The communications system of claim 23, wherein each airplane is configured to stay aloft without refueling for at least 3000 hours. (col.7; 51-67) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the suborbital platform is configured to operate for at least 3000 hours in order to provide a solar powered aircraft which can remain aloft indefinitely.



Art Unit: 2683

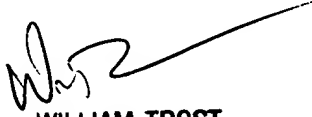
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharad Rampuria whose telephone number is 703-308-4736.

The examiner can normally be reached on Mon-Thu. (8:15-5:45) alternate Fri.( 8:15-4:45).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 703-308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

Sharad K. Rampuria  
October 20, 2003

  
**WILLIAM TROST**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**